
Technical Report

**Interim Report Summarizing
Additional Soil and Roof Runoff
Investigation Results**

Prepared for
**Northwest Pipe Company
Portland Facility**

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Prepared by

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Table 1
Summary of Historical Surface Soil Sample Results
Northwest Pipe Company

Station ID	SS1	SS2	GP5	SS101	SS102	SS103	SS104	SS-01	SS-02	SS-03	SS-04	SS-05	SS-06	SS-07	SS-08	SS-09	SS-10	SS-11	
Sample ID	SS10_5091001	SS20_5091001	GP50_5091001	SS101	SS102	SS103	SS104	SS-01-0	SS-02-0	SS-03-0	SS-04-0	SS-05-0	SS-06-0	SS-07-0	SS-08-0	SS-09-0	SS-10-0	SS-11-0	
Date Sampled	09/10/01	09/10/01	09/10/01	06/21/05	06/21/05	06/21/05	06/21/05	10/04/06	10/04/06	10/04/06	10/04/06	10/04/06	10/04/06	10/04/06	10/04/06	10/04/06	10/04/06	10/04/06	
Sample Type	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
PAH			Joint Source Control SLVs*																
Anemaphthene	mg/Kg	0.300																	
Acenaphthylene	mg/Kg	0.200																	
Anthracene	mg/Kg	0.845																	
Benz(a)anthracene	mg/Kg	1.050																	
Benz(a)pyrene	mg/Kg	1.450																	
Benz(b)fluoranthene	mg/Kg	—																	
Benz(g,h,i)perylene	mg/Kg	0.300																	
Benz(k)fluoranthene	mg/Kg	13.000																	
Chrysene	mg/Kg	1.290																	
Dibenz(a,h)anthracene	mg/Kg	1.300																	
Fluoranthene	mg/Kg	2.230																	
Fluorene	mg/Kg	0.536																	
Indeno(1,2,3-cd)pyrene	mg/Kg	0.100																	
Naphthalene	mg/Kg	0.561																	
Phenanthrene	mg/Kg	1.170																	
Pyrene	mg/Kg	1.520																	
Total PAHs*	mg/Kg	22.8																	
Metals Total																			
Zinc	mg/Kg	459.000																	
PCBs																			
Aroclor-1016	mg/Kg	0.630	0.0084U	0.0081U				0.0342	U 0.0348	U 0.0345	U 0.0331	U 0.022U			0.4U			0.2U	0.043U
Aroclor-1221	mg/Kg	—	0.0084U	0.0081U				0.0342	U 0.0348	U 0.0345	U 0.0331	U 0.022U			0.4U			0.2U	0.043U
Aroclor-1232	mg/Kg	—	0.0084U	0.0081U				0.0342	U 0.0348	U 0.0345	U 0.0331	U 0.022U			0.4U			0.2U	0.043U
Aroclor-1242	mg/Kg	—	0.0084U	0.0081U				0.0342	U 0.0348	U 0.0345	U 0.0331	U 0.022U			0.4U			0.2U	0.043U
Aroclor-1248	mg/Kg	1.500	0.0084U	0.0081U				0.0342	U 0.0348	U 0.0345	U 0.0331	U 0.022U			0.4U			0.2U	0.043U
Aroclor-1254	mg/Kg	0.300	—	—	6.2			0.0342	U 0.0348	U 0.0345	U 0.0331	U 0.022U			0.4U			0.2U	0.043U
Aroclor-1260	mg/Kg	0.200	0.0084U	0.0081U				0.0342	U 0.0348	U 0.139	U 0.0595	U 0.022U			0.4U			0.2U	0.043U
Aroclor-1262	mg/Kg	—	—	—	—										0.4U			0.2U	0.043U
Aroclor-1268	mg/Kg	—	—	—	—										0.4U			0.2U	0.043U
Total PCBs	mg/Kg	0.00039	—	—	6.2			0.0657	U 0.0535	U 0.75	U 0.21	U 0.077U			4.8			2.6	0.08
TPH																			
Diesel	mg/Kg	3900*													4.7U			360	120U
VOCs																			
All non-detect																			

Notes:
*Samples type: N = Normal sample, FD = Field Duplicate
B = Blank contamination
D = Analyzed at a secondary dilution factor
U = The analyte was analyzed for, but not detected.
Bolded = detect
Shaded = detected result exceeded selected criteria
— = Not Established
¹ Screening level values taken from Table 3-1 of the Portland Harbor Joint Source Control Strategy, Revised July 2007
² Screening level values taken from DEQ Risk-Based Decision Making for Petroleum Contaminated Sites, Soil Ingestion, Dermal Contact and Inhalation, Occupational Scenario, Revised July 2007
³ Total PAH PEC based on MacDonald et al. 2000
These preliminary screening levels are intended to provide conservative values that are useful for placing reported constituent concentrations into context. They do not represent cleanup levels and are not based on promulgated regulations.

Table 1
Summary of Historical Surface Soil Sample Results
Northwest Pipe Company

Station ID	SS311	SS312	SS313	SS314	SS315	SS315	SS316	SS317	SS318	SS319	SS320	SS321
Sample ID	SS311-0	SS312-0	SS313-0	SS314-0	SS315-0	SS315-1	SS316-0	SS317-0	SS318-0	SS319-0	SS320-0	SS321-0
Date Sampled	09/25/07	09/25/07	09/25/07	09/25/07	09/25/07	09/25/07	09/25/07	09/25/07	09/25/07	09/25/07	09/25/07	09/25/07
Sample Type	N	N	N	N	N	FD	N	N	N	N	N	N
	Joint Source Control SLVs ¹	Units	Control SLVs ¹									
Analyte												
PAH												
Aceanaphthalene	mg/Kg	0.300		2.03	0.0193J		0.00298J	0.00367J	0.00463J		0.0247J	0.024J
Aceanaphthalene	mg/Kg	0.200		0.0474J	0.0212J		0.00768J	0.0139J	0.0032J		0.0099J	0.24
Anthracene	mg/Kg	0.845		7.42	0.0762J		0.0159J	0.0225J	0.0178J		0.2	0.603
Benzo (a) anthracene	mg/Kg	1.050		9.58	0.33		0.0746	0.0641	0.0843		1.57	1.42
Benzo (a) pyrene	mg/Kg	1.450		7.83	0.356		0.0976	0.0999	0.0888		0.734	0.917
Benzo (b) fluoranthene	mg/Kg	—		9.81	0.663		0.246	0.275	0.137		2.18	2.78
Benzo (g,h,i) perylene	mg/Kg	0.300		4.54	0.325		0.151	0.116	0.0628		0.922	0.582
Benzo (k) fluoranthene	mg/Kg	13.000		6.53	0.248		0.121	0.0563	0.0485		0.845	0.584
Chrysene	mg/Kg	1.290		6.67	0.382		0.129	0.113	0.0828		2.83	3.04
Dibenz (a,h) anthracene	mg/Kg	1.300		1.15	0.0541J		0.026	0.0268	0.0134		0.263	0.136
Fluoranthene	mg/Kg	2.230		35.9	0.649		0.135	0.742	0.167		1.88	5.4
Fluorene	mg/Kg	0.535		1.92	0.00818U		0.00342U	0.00404J	0.00443		0.0122J	0.0472J
Indeno (1,2,3-cd) pyrene	mg/Kg	0.109		3.25	0.241		0.0958	0.0864	0.0492		0.598	0.481
Naphthalene	mg/Kg	0.561		0.308 J	0.0144 J		0.00539 J	0.00549 J	0.00195		0.0104 J	0.0228 J
Phenanthrene	mg/Kg	1.170		24.8	0.257		0.0375	0.0433	0.0683		0.232	0.361
Pyrene	mg/Kg	1.520		28.2	0.623		0.143	0.146	0.153		2.12	2.48
Total PAHs ²	mg/Kg	22.8		48.2	4.3		1.3	1.2	1.0		14.4	15.6
Metals Total												
Zinc	mg/Kg	459.000										
PCBs												
Aroclor-1016	mg/Kg	0.530		0.49 U	0.0252U							
Aroclor-1221	mg/Kg	—		0.49 U	0.0252U							
Aroclor-1232	mg/Kg	—		0.49 U	0.0252U							
Aroclor-1242	mg/Kg	—		0.49 U	0.0252U							
Aroclor-1248	mg/Kg	1.500		0.49 U	0.0252U							
Aroclor-1254	mg/Kg	0.300		2.73	0.186							
Aroclor-1260	mg/Kg	0.200		0.49 U	0.0363							
Aroclor-1262	mg/Kg	—										
Aroclor-1268	mg/Kg	—										
Total PCBs	mg/Kg	0.00039		2.73	0.22							
TPH												
Diesel	mg/Kg	3900 ³		44.5 J	64.6 J	25.3 J	26.5 J	35 J	36.3 J	6.8 J	342 J	36.5 J
VOCs	All non-detect										288 J	183 J

Notes:

*Samples type: N = Normal sample, FD = Field Duplicate

B = Blank contamination

D = Analyzed at a secondary dilution factor

U = The analyte was analyzed for, but not detected.

Bolded = detect

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— = Not Established

¹ Screening level values taken from Table 3-1 of the Portland Harbor Joint Source Control Strategy, Revised July 2007

² Screening level values taken from DEQ Risk-Based Decision

Making for Petroleum Contaminated Sites, Soil Ingestion, Dermal Contact and Inhalation, Occupational Scenario, Revised July 2007

³ Total PAH PEC based on MacDonald et al. 2000

These preliminary screening levels are intended to provide conservative values that are useful for placing reported constituent concentrations into context. They do not represent cleanup levels levels and are not based on promulgated regulations.

Table 3
Summary of Analytical Results for Surface Soil Samples Collected 10/19/2009
Northwest Pipe Company

Sample ID:				SS-401-101909-0	SS-402-101909-0	SS-403-101909-0	SS-404-101909-0	SS-405-101909-0	SS-406-101909-0	SS-407-101909-0	SS-408-101909-0	SS-409-101909-0	SS-410-101909-0	SS-411-101909-0	SS-411-101909-1			
Sample QA Type:				N	N	N	N	N	N	N	N	N	N	N	FD			
Chem/Group/Chemical																		
	CAS_NO	Method	Units	Screening Criteria	DEQ RBC ¹	DEQ ² Background												
Naphthalene	91-20-3	EPA 8270m	mg/kg	0.561	770	3.8	0.0123 J	0.00446 J	0.0171	0.0178 J	0.139	0.0075 J	0.00354 U	0.0313	0.135 J			
Phenanthrene	85-01-8	EPA 8270m	mg/kg	1.17	—	—	0.0773	0.0771	1.30	0.462	0.443	0.143	0.0184	46.1	35.4			
Pyrene	129-00-0	EPA 8270m	mg/kg	1.52	21000	210	0.15	0.439	3.07	1.7	1.8	0.283	0.0633	127	66.5			
Total PAH ³				—	—	—	0.99	4.1	18.9	16.6	14.2	2.9	0.63	569.5	400.1			
Polychlorinated Biphenyls:																		
Aroclor 1016	12674-11-2	EPA 8082	mg/kg	0.53	—	3.9	0.00367 U	0.0178 U	0.036 U	0.0196 U	0.0191 U	0.0372 U	0.0076 U	0.00179 U	0.408 U	0.00768 U	0.0975 U	0.0761 U
Aroclor 1221	11104-28-2	EPA 8082	mg/kg	—	—	0.22	0.00732 U	0.0356 U	0.0717 U	0.0391 U	0.038 U	0.0742 U	0.0152 U	0.00397 U	0.814 U	0.0153 U	0.194 U	0.152 U
Aroclor 1232	11141-16-5	EPA 8082	mg/kg	—	—	0.22	0.00367 U	0.0178 U	0.036 U	0.0196 U	0.0191 U	0.0372 U	0.0076 U	0.00179 U	0.408 U	0.00768 U	0.0975 U	0.0761 U
Aroclor 1242	53469-21-9	EPA 8082	mg/kg	—	—	0.22	0.00367 U	0.0178 U	0.036 U	0.0196 U	0.0191 U	0.0372 U	0.0076 U	0.00179 U	0.408 U	0.00768 U	0.0975 U	0.0761 U
Aroclor 1248	12672-29-6	EPA 8082	mg/kg	1.5	—	0.22	0.00367 U	0.0178 U	0.036 U	0.0196 U	0.0191 U	0.0372 U	0.0076 U	0.00179 U	0.408 U	0.00768 U	0.0975 U	0.0761 U
Aroclor 1254	111097-69-1	EPA 8082	mg/kg	0.3	—	0.22	0.0658	0.366	0.54	0.302	0.349	0.46	0.12	0.025	0.74	0.181	0.144	0.946
Aroclor 1260	11096-32-6	EPA 8082	mg/kg	0.2	—	0.22	0.00367 U	0.0178 U	0.036 U	0.0196 U	0.0191 U	0.0372 U	0.0076 U	0.00179 U	0.408 U	0.00768 U	0.0975 U	0.0761 U
Aroclor 1262	37324-23-5	EPA 8082	mg/kg	—	—	—	0.00367 U	0.0178 U	0.036 U	0.0196 U	0.0191 U	0.0372 U	0.0076 U	0.00179 U	0.408 U	0.00768 U	0.0975 U	0.0761 U
Aroclor 1268	11100-14-4	EPA 8082	mg/kg	—	—	—	0.00367 U	0.0178 U	0.036 U	0.0196 U	0.0191 U	0.0372 U	0.0076 U	0.00179 U	0.408 U	0.00768 U	0.0975 U	0.0761 U
Total PCBs ³				0.00039	0.98	0.22	0.07	0.37	0.54	0.30	0.40	0.46	0.12	0.03	8.7	0.18	1.1	0.9
Phthalates:⁴																		
Bis(2-ethylhexyl)phthalate	117-81-7	EPA 8270m	mg/kg	0.33	150000	—	0.0668	0.389	0.191	0.325	0.139	0.335	0.467	0.0603	0.667	0.178	0.59	0.07
Butyl benzyl phthalate	85-68-7	EPA 8270m	mg/kg	—	—	—	0.382	0.0846 J	0.0283 J	0.075	0.0373 J	0.148 U	0.031	0.0145 J	0.163 U	0.0492	0.637 J	0.501 J
Diethyl phthalate	84-66-2	EPA 8270m	mg/kg	0.6	—	—	0.0147 U	0.0707 U	0.0144 U	0.0314 U	0.0306 U	0.148 U	0.0151 U	0.0144 U	0.163 U	0.0153 U	0.157 U	0.304 U
Dimethyl phthalate	131-11-3	EPA 8270m	mg/kg	—	—	—	0.0147 U	0.0707 U	0.0144 U	0.0314 U	0.0306 U	0.148 U	0.0151 U	0.0144 U	0.163 U	0.0153 U	0.157 U	0.304 U
Di-n-butyl phthalate	84-74-2	EPA 8270m	mg/kg	0.06	—	—	0.0147 U	0.0707 U	0.0144 U	0.0314 U	0.0306 U	0.148 U	0.0151 U	0.0144 U	0.163 U	0.0153 U	0.157 U	0.304 U
Di-n-octyl phthalate	117-84-0	EPA 8270m	mg/kg	—	—	—	0.0147 U	0.141 U	0.289 U	0.157 U	0.383 U	0.296 U	0.151 U	0.144 U	0.816 U	0.305 U	0.783 U	0.76 U

Notes:

*Samples type: N = Normal sample, FD = Field Duplicate

¹Portland Harbor Joint Source Control Strategy Table 3-1 Screening Level Values for Soil

Stormwater Sediment Stormwater, Groundwater and Surface Water (7/16/07 Revision)

²DEQ Risk Based Concentrations Soil Ingestion, Dermal Contact and Inhalation for Occupational Scenario 7/4/07 Revision

³DEQ - Northwest Region Clean Fill Screening Table for Unrestricted Upland Disposal, 2/27/08 version

These preliminary screening levels are intended to provide conservative values that are useful for placing reported constituent concentrations into context. They do not represent cleanup levels and are not based on promulgated regulations.

⁴Phthalates and pesticide non-defects were removed from this table

⁵Total PAHs and PCBs calculated using 0 for non-defects.

mg/kg = milligrams per kilogram

Bold result = detection

Shaded cell = screening criteria exceeded.

— = no screening level available

J = Estimated value below reporting limit.

U = Not detected at specified reporting limit.

Figure 1
Surface Soil
Sample Locations
Northwest Pipe Company
Portland, Oregon

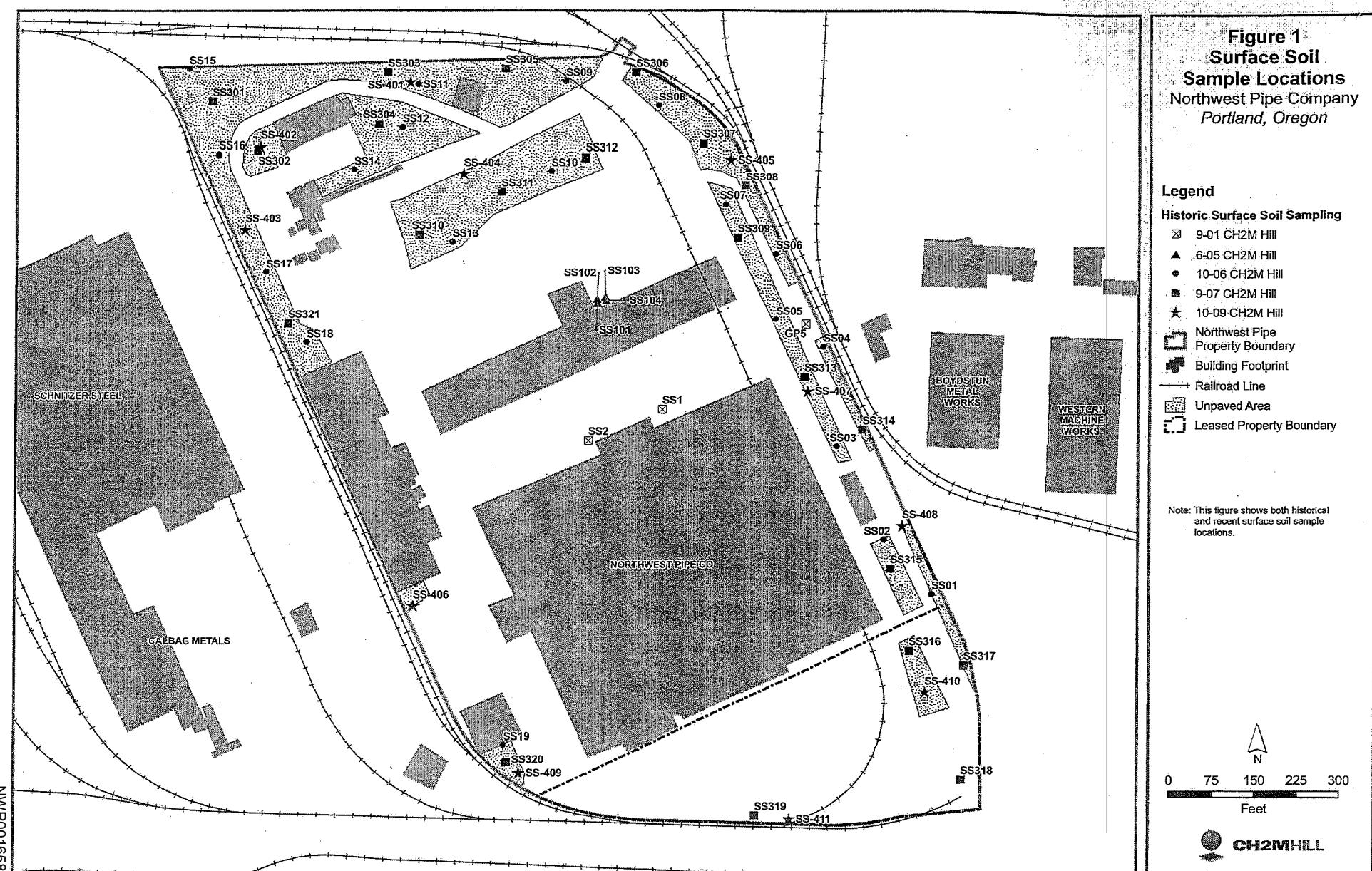
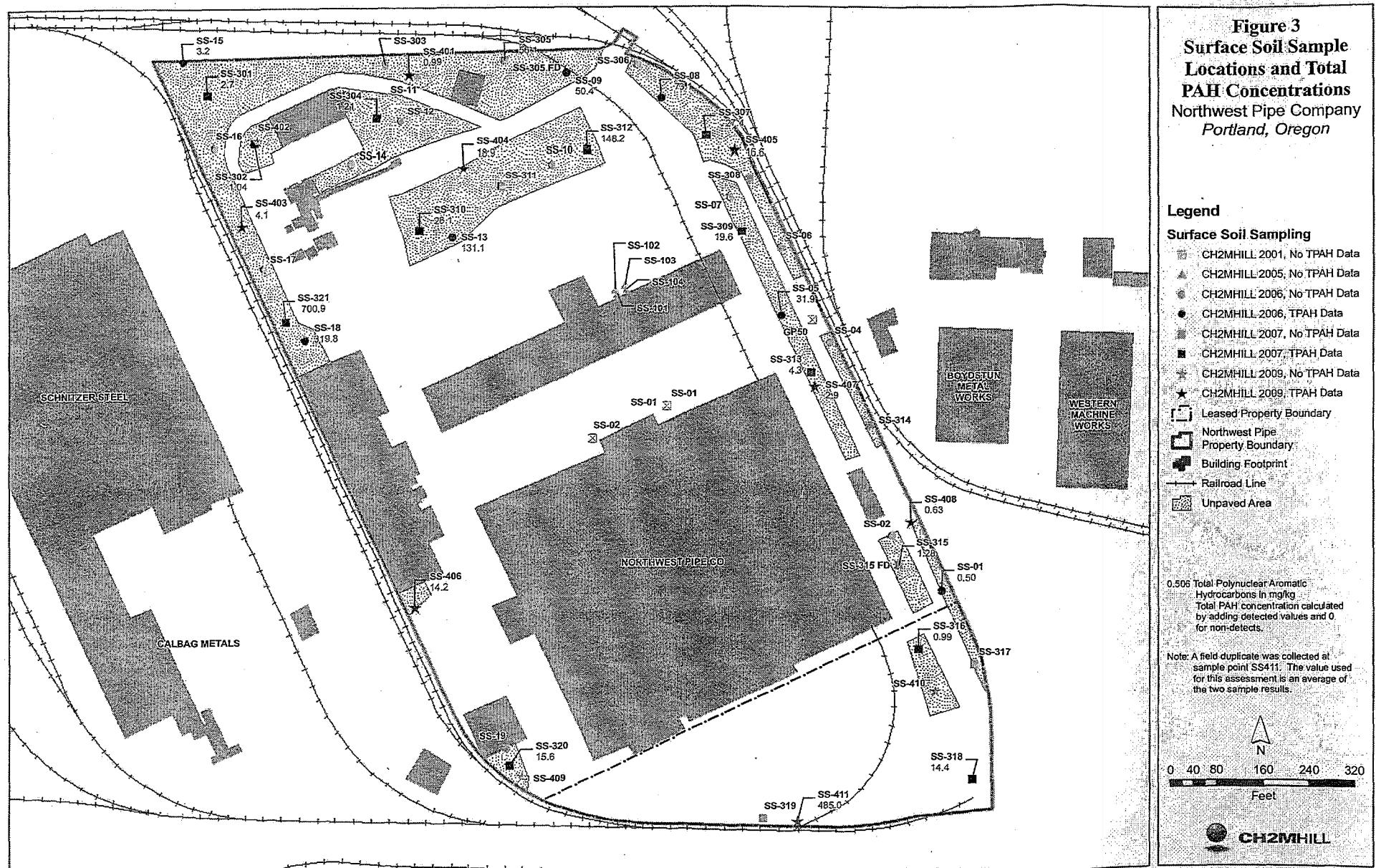


Figure 3
Surface Soil Sample Locations and Total PAH Concentrations
Northwest Pipe Company
Portland, Oregon



NWPP016585

PDX\IROSAPROJ\NORTHPIPECOMPANY358932\PORTHARBSUP\GISMXDS\2010_MARCH\FIG3_SURFACESOIL_PAHCONCENTRATIONS.MXD EDIURBA 4/5/2010 12:07:28

Figure 4
Surface Soil Sample Locations and Total PCB Concentrations
Northwest Pipe Company
Portland, Oregon

